IN THE SPECIFICATION

Please amend the paragraph at page 4, line 16 to page 5, line 7, as follows:

When an image that has suffered such attacks is input, the conventional technique recovers synchronization of a PN sequence by executing a process for estimating a PN sequence used in step El at the time of embedding upon detection of watermark information. After that, the processes in steps Dl to D3 are executed to extract the embedded watermark information. However, in order to recover synchronization of the PN sequence from the image signal alone, a search must be conducted by trying a process for detecting watermark information using a plurality of candidates of PN sequences and adopting a candidate that can be detected ~~satisfactory~~ satisfactorily. For this purpose, problems of increases in arithmetic operation volume and circuit scale are posed. Further, since a watermark embedded in an image signal under an attack of scaling or rotation is weakened, it is very possible that the watermark cannot be detected even if the contents (scaling, rotation, etc.) of the attack [[is]] are detected and a detection method corresponding to the attack is utilized.

Please amend the paragraph at page 22, lines 8-16, as follows:

If the throughput of the processor is relatively low, the operation amount controller 46 controls the correlator 32 so as to reduce the operation amount of the [[unit]] correlator 32 per unit time. Specifically, if the throughput is lower than a predetermined threshold value, the operation amount controller 46 periodically stops the operation of the correlator 32 in units of pixels, lines, fields or frames of the input image signal 10.

Please amend the paragraph at page 22, line 17 to page 23, line 5, as follows:

If the operation amount of the correlator 32 is reduced, the accumulation amount of the specific frequency component signal at the second accumulator 44 ~~reduces~~ is reduced.

Accordingly, the watermark information detection performance degrades. To secure the accumulation amount, the operation amount controller 46 controls the accumulation period (second period) of the accumulator 44. If, for example, the correlator 32 is stopped every two lines to perform a correlation operation every two lines, the operation amount per unit time is halved, accordingly the accumulation amount of the correlation value is halved. To secure the same accumulation amount as that obtained when the operation amount of the correlator 32 is not controlled, the operation amount controller 46 doubles the accumulation period of the accumulator 44.

Please amend the paragraph at page 29, line 23 to page 30, line 15, as follows:

The watermark detector 71A receives a second accumulation signal output from the accumulator 44 and indicative of the normalized and accumulated specific frequency component of an auto-correlation signal, then detects watermark information in the second accumulation signal using a first detection manner, and supplies the detection result to the watermark determination unit 72. Similarly, the watermark detector 71B detects watermark information in the second accumulation signal using a second detection manner, and supplies the detection result to the watermark determination unit 72. The watermark determination unit 72 compares the watermark information items from the watermark detectors 71A and 71B. If they are identical, the watermark determination unit 72 determines that the digital watermark has been detected, and outputs the detected watermark information. If they are not identical, the unit 72 determines that no digital watermark is embedded, and outputs a message "No Watermark".

Please amend the paragraph at page 38, lines 1-14, as follows:

FIG. 20 illustrates the configuration of the system employed in the seventh embodiment. HD and SD image signals 105 and 106 are output from one or more of the video devices 101, 102, 103 and 104 provided outside the digital watermark detection apparatus, and are supplied to a display device (not shown). The SD image signal 106 is also input to the watermark information detector 12. The watermark information detector 12 has the configuration as shown in [[FIG.]] FIGs. 2, 5 or 6. Thus, an increase in cost for down conversion can be avoided by using, instead of the image size reduction unit 11, such a video device 101, 102, 103 or 104 as has a function for converting an HD image signal into an SD image signal.